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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,470	09/21/2004	Shih-Chang Shei	10721-US-PA	5469
31561	7590	11/02/2005	EXAMINER	
JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE			MAI, THIEN T	
7 FLOOR-1, NO. 100			ART UNIT	
ROOSEVELT ROAD, SECTION 2			PAPER NUMBER	
TAIPEI, 100			2876	
TAIWAN			DATE MAILED: 11/02/2005	

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/711,470	SHEI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Thien T. Mai	2876	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 September 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 September 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

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## DETAILED ACTION

### *Drawings*

1. Figures 1A-1H should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Double Patenting*

1. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

2. Claims 1-8 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-8 of copending Application No. 10/711,280. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claim(s) 1, 2, 4, and 6 is/are rejected under 35 U.S.C. 102(b) as being anticipated by Lin et al. (US 2002/0105076)

Regarding claim(s) 1, Lin discloses an LED bumping process comprising:

- providing a wafer 10 having a plurality of electrodes 32 (0090, 0004) in transistors, diodes, and the like (0004), which inherently known to exist in LED's;
- forming an UBM (under bump metallurgy) layer 33 on each of the electrodes 24 (0046, Fig. 13-15);
- forming a plurality of posts 35 on the UBM layer by a printing process (0090, Fig. 13-15); and
- reflowing the posts by a layer (0094, Figs. 14-15).

Regarding claim 2, Lin discloses disposing a pattern plate 32 having a plurality of openings on the wafer before the printing process, wherein the UBM layers located the electrodes are exposed by the openings of the pattern plate (0054, 0069).

Regarding claim(s) 4, Lin discloses after filling the solder material into the openings 31 of the pattern plate, the printing process further comprises removing the pattern plate 37, 39 to form the posts and the solder material in the openings turns into plurality of posts 35 (Figs. 12-15).

Regarding claim(s) 6, Lin discloses the solder posts is made from copper (Cu) (0087).

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim(s) 3 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (20020105076) in view of Lee (20020104449)

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Regarding claim(s) 3, Lin discloses a print process comprising:

- applying a solder material onto the pattern plate and filling the solder material into the opening of the pattern (see Figs. 6-15)

Lin fails to disclose the print process above being done by scraper. However, Lee discloses such method is known. Lee discloses that

*"a solder screen printing process is then performed using a scraper 220 to filled the first openings 212 with a solder paste 218" (Specification par. 0022)*

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to utilize the method and/or the scraper of Lee for ease of applying solder and therefore the resulting better production/revenue would benefit the company.

3. Claim(s) 5, 7, and 8 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (20020105076) in view of Lee (20020134496)

Regarding claim(s) 5, Lin discloses all limitations set forth in this claim as discussed above except solder posts being made from Sn/Pb alloy. Lee'496 discloses such method is known (0013).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to utilize Sn/Pb deposition method taught by Lee'496 for the desired chemical characteristics offered by the alloy and for ease in fabrication.

Regarding claim(s) 7, Lin discloses all limitations set forth in this claim as discussed above except forming UBM layers comprises electroless plating. Lee'496 discloses that "the technique of electroless plating may also be used to form the UBM structure" (0069). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to utilize the plating technique taught by Lee'496 with the motivation for the desire to avoid damage to plated solder layer.

Regarding claim(s) 8, Lee further discloses UBM being made from titanium (Ti) alloys (0011).

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*Conclusion*


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thien T. Mai whose telephone number is 571-272-8283. The examiner can normally be reached on Monday through Friday, 8:00 - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lee can be reached on 571-272-2398. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thien T Mai  
Examiner  
Art Unit 2876

TM



**THIEN M. LE  
PRIMARY EXAMINER**